

FLORIDA HIGHWAYS

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No. 5



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May, 1930

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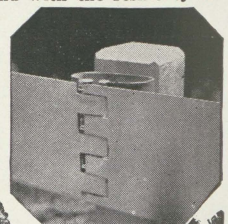
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FLORIDA

Vol. VII
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HIGHWAYS

MAY
1930

Transactions at Meeting of State Road Department Held at Orlando May 6, 1930

PURSUANT to due and legal notice, meeting of the State Road Department of Florida was held at Orlando May 6, 1930, with all members present, as follows: Robert W. Bentley, Chairman, W. A. Shands, Mallie Martin, E. R. Graham and Geo. B. Hills. B. M. Duncan, State Highway Engineer; B. A. Meginniss, Attorney for the Department, and H. J. Morrison, Federal Highway Engineer, were also in attendance.

Bay County—Road 20

Messrs. W. L. Wilson and H. P. Edwards of Panama City appeared before the Department and urged that a contract for the materials for Road 20 be let at the earliest possible moment. They were advised that the matter would be given further attention at the present meeting.

Crane Creek Bridge—Road 4—Brevard County

Messrs. T. K. Hastings, Wm. H. Kempfer, R. O. Couch, O. E. Elliott, E. H. Wade, F. W. Brecht, Roy Cooper, J. L. Porcher, F. F. Fairfield, W. A. Sweat, R. L. Rowe, T. P. Martin, J. P. Hunter, W. G. Tubbs, Charles Valentine, G. W. Walters, Chas. Gagner, I. Kimball Hicks, Joseph Masch, Clair A. Inskeep, H. B. Moore, Elton Hall, W. G. Vaughn, Neill Johnson, J. C. Skelton, Claude Edge, J. W. Hotchkiss, Albert Vorkeller, David Peel, E. C. Lathrop, A. H. Stuart, Alex J. Goode and Mrs. Goode and Mrs. Jessie S. Goode constituted a delegation from Brevard County who urged that a contract be let for the construction of the Crane Creek bridge on Road 4 as soon as it is possible. They were informed that the preparation

of plans for this bridge will probably require from 60 to 90 days.

On motion of Mr. Graham, seconded by Mr. Shands, the following resolution was adopted:

BE IT RESOLVED, that as soon as plans have been prepared and Federal authority for construction obtained, that the Chairman be and he is authorized to advertise for bids for the construction of the Crane Creek Bridge, Project 71, Road 4, Brevard County.

Brevard County—Road 24

The same delegation urged upon the Department the early completion of State Road 24 in Brevard County. Their request in this particular was seconded by Mr. W. J. Steed of Kissimmee. The delegation was informed that plans for the completion of the road have been worked up and submitted to the Engineer for the U. S. Bureau of Public Roads, and that as soon as they have been approved and Federal authority for construction given, the Department will advertise for bids for the construction of said section of said road.

Hillsborough County

The members of the Board of County Commissioners of Hillsborough County appeared before the Department and placed before it the following matters:

Road 5

The Commissioners expect to secure the remainder of the right of way necessary on this road between Sulphur Springs and the Pasco County line and present it to the Department in the very near future. The grade on Road 5 at the Alafia River has been finished and the Commissioners have taken care of the right of way difficulties which developed there. They urged that the Department make arrangements to construct Road 5 between 40th Street in the City of Tampa and Six Mile Creek.

Road 17

The Commissioners requested that the Department take steps to construct that portion of this road between Tampa and the Pinellas County line. They reported that the bridge across the Hillsborough River on the proposed location of this road has entirely failed, and requested that the Department detail an engineer to look over this situation with a view to assisting in its replacement, if possible. This request was taken under advisement. They also requested that the Department construct that section of Road 17 between Plant City and Polk County line during the present year, but were advised that the Department is not in a position to do this.

Road 23

The Commissioners requested the Chairman and Highway Engineer to go over the proposed location of State Road 23 between Plant City and Palmetto.

Lake County—Road 2

A delegation from Lake County consisting of the County Commissioners, Dr. I. N. Kennedy and Mr. J. W. Hunter, County Attorney, appeared before the Department to urge the letting of a contract for the construction of State Road 2 between Tavares and Mt. Dora. Mr. Hunter stated that the County has secured the necessary right of way and has in the bank available for the construction of this road approximately \$75,000.00 which they are will-

ing to turn over to the Department. They were advised that as soon as the Department has received the deeds for the necessary right of way and the said funds have been turned over to the Department that it will proceed to advertise for bids. The same delegation also requested that the Department construct during this year that section of State Road 2 between Eustis and Mt. Dora. They were informed that the Department cannot accede to this request, as the section referred to is not included in the budget for 1930.

Okeechobee County—Road 29

Mr. Peter Tomasello appeared before the Department and stated that a flood situation had developed on Road 29 north of Okeechobee which may be due in some part to the construction of State Road 29, and asked that the Department give to the County of Okeechobee the services of an engineer to make a survey of this situation, with a view to determining the cause of this flood condition and the proper remedy for same.

State Road 162

Mr. Tomasello also presented to the Department a resolution adopted by the County Commissioners of Okeechobee County, in which the Department was requested to so locate State Road 162 that it may use and traverse the bridge which has been constructed by Okeechobee County across the Kissimmee River at a point near Bassenger.

Orange County—Road 2

A delegation from the towns of Taft and Pinecastle in Orange County appeared before the Department and requested that before a final determination of the route of State Road 2 between Orlando and Kissimmee is made, that the Department investigate and give serious consideration to routing the same via Taft and Pinecastle.

Road 22

Mr. L. L. Payne, Chairman of the Commissioners of Orange County, requested that the Department take over that portion of Road 22 in Orange County.

Palm Beach County

Senator A. H. Wagg, Mr. I. I. Himes, member of the Board of County Commissioners, and a large delegation from Palm Beach County appeared before the Department and presented a petition from many tax payers and organizations in said county urging that the County of Palm Beach be relieved of the payment of \$39,000.00 which it is obligated to pay to the Department for the repair and reconstruction of State Road 143 in said county. This petition was supplemented by a resolution by the Board of County Commissioners of Palm Beach County making a similar request. The delegation was joined in its request by Mr. Peter Tomasello, representative of Okeechobee County in the Legislature.

Mr. Willard G. Smith, member of the Board of County Commissioners of Palm Beach County, extended an invitation to the members to attend the Bean Festival to be held in Pahokee on May 10.

Orange County—Road 2—Orlando

Mayor J. L. Giles of Orlando appeared before the Department and requested that Project 74 on Road 2 be extended to Church Street in Orlando, and in the event that the Department shall not find this possible that it be extended to Amelia Avenue in any case. He was advised that this matter has been



determined, but that if Orlando can make financial arrangements for the extra width paving necessary to extend the project, that the Department can probably arrange to comply with the request.

Orange County—Road 2—Apopka

Mr. John D. Jewell, Mayor of Apopka, appeared before the Department and requested that Fourth Street in Apopka, which is a section of Road 2, be widened to 22 feet at that point where the plans call for an 18 foot pavement. He was informed that if the town will pay for the extra width paving the request will be complied with.

Polk County

Mr. J. W. Foley, member of the Board of County Commissioners of Polk County, accompanied by a large delegation, presented to the Department a number of requests, as follows:

That the Department build a link in the present road between Polk City and Haines City. They were advised that this particular road is not on the state system and that this particular request can not be complied with.

That in the construction of Road 2 between Haines City and the Osceola County line that the line of the old road be adopted as the location as nearly as it can consistently be done.

That the surfacing of State Road 17 between Haines City and Lakeland be completed. They were informed that this item is in the budget and that the Department will get to it as soon as possible.

Correction of Minutes

On motion of Mr. Shands, seconded by Mr. Bentley, the following resolution was adopted:

BE IT RESOLVED, that the minutes of the last meeting of the Department pertaining to Jefferson County Road 11 appearing at page 101 of the current

minute book be corrected by eliminating therefrom all reference to the particular section of Road 11 as that portion between Monticello and the Georgia Line, so that same shall read as follows:

Jefferson County—Road 11

Messrs. D. A. Finlayson, Lamar Sledge and T. T. Turnbull appeared before the Department to urge the letting of a contract for the paving of State Road 11. On motion of Mr. Shands, seconded by Mr. Graham, the following resolution was adopted:

“Be it Resolved, That the Engineer of this Department be instructed to prepare plans and specifications for the advertisement for bids for the paving of the unpaved portions of State Road 11.”

On motion of Mr. Shands, seconded by Mr. Graham, the Department was adjourned until two o'clock P. M.

AFTERNOON SESSION—2:00 O'CLOCK

Present as at morning session.

Chairman's Report

The Chairman submitted a report of his acts since the last meeting of the Department, which said report is in words and figures as follows, to-wit:

Gentlemen:

Since our last meeting purchase of materials and convict supplies have been made, and a small contract for restoring paving on a city street in Fort Meade, has been let. Bid sheets on these matters were sent to you for your information.

Florida's request for aid from the Federal Government in line with aid asked for by other States in restoration of roads and bridges damaged by

(Turn to page 5)



Florida Highways

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PERSONNEL OF DEPARTMENT

ROBERT W. BENTLEY (*Bradenton*), *Chairman*
(*Official Residence, Tallahassee.*)

W. A. SHANDS, *Gainesville*
MALLIE MARTIN, *Crestview*
GEORGE B. HILLS, *Jacksonville*
ERNEST R. GRAHAM, *Pennsuco* } *Members.*

KARL ROESCH, *Tallahassee*, *Secretary*

PERSONNEL OF EMPLOYEES IN GENERAL CHARGE OF THE WORK OF THE DEPARTMENT

Engineering Division

B. M. Duncan, TallahasseeState Highway Engineer
L. K. Cannon, Tallahassee.....Ass't. State Highway Engineer
W. I. Nolen.....Bridge Engineer
H. C. Weathers, Gainesville.....Testing Engineer
F. W. Berry, Jr., Tallahassee.....Office Engineer
W. L. Thorpe, Gainesville.....Supt. of Equipment
E. K. Fogg, Pensacola.....1st Division
Counties—Bay, Calhoun, Escambia, Franklin, Gadsden, Gulf,
Holmes, Jackson, Jefferson, Leon, Liberty, Okaloosa, Santa
Rosa, Wakulla, Walton, Washington.

M. P. Phillips, Lake City.....2nd Division
Counties—Baker, Bradford, Clay, Columbia, Dixie, Duval, Ham-
ilton, Lafayette, Madison, Nassau, St. Johns, Suwannee, Tay-
lor, Union.

R. L. Bow, West Palm Beach.....3rd Division
Counties—Brevard, Broward, Collier, Dade, Glades, Hendry, Indian
River, Lee, Martin, Monroe, Okeechobee, Palm Beach, St. Lucie.

L. B. Thrasher, Ocala.....4th Division
Counties—Alachua, Citrus, Flagler, Gilchrist, Herndando, Lake,
Levy, Marion, Orange, Putnam, Seminole, Sumter, Volusia.

R. K. Van Camp, Lakeland.....5th Division
Counties—Charlotte, Desoto, Hardee, Highlands, Hillsborough,
Manatee, Osceola, Pasco, Pinellas, Polk, Sarasota.

Auditing Division

S. L. Walters, Tallahassee.....Auditor

B. A. Meginniss, Attorney for the Department,
Editor and Business Manager.

Volume VII

May, 1930

Number 5



BUDGETING HIGHWAY PROGRAMS

One of the greatest needs of the highway industry is an adequate supply of money over a period of years with which to accomplish the construction and maintenance work that must be done.

To accomplish this result, budgeting of funds in accordance with a program worked out for a period of years is perhaps the best solution.

The budgeting of State highway funds has been done in a few States for several years but in the counties there is still existing a condition of hand to mouth living with respect to funds. This condition can be corrected to a considerable extent by budgeting—even if the funds available are small.

It stands to reason that in any process of convincing the public that certain improvements are justified and needed the use of a well-conceived program in presenting the matter to the public will do much to aid in "selling" the public on the idea.

A program for the use of funds outlining plans for several years in advance is of prime importance in obtaining funds and keeps the public informed of the tasks highway officials are undertaking—a duty of public officials.—Good Roads.

INCREASED FEDERAL AID

Additional stability and continuity have been built into the nation's road program by the \$50,000,000 annual increase (for three years) in Federal Aid highway funds, provided for in the measure passed by Congress and approved by the President April 4. Specifically, the new act authorizes federal aid to the extent of \$125,000,000, instead of the former \$75,000,000, for each of the fiscal years 1931-33, inclusive. As in the past, the Federal funds, matched by equal amounts from the States, must be spent upon a designated system of primary routes constituting 7 per cent of the total highway mileage. In those States that have completed the surfacing of their 7-per cent systems, six in all, the allowable amount of Federal Aid that may be expended per mile of road is increased to \$25,000, as compared with \$15,000 under former regulations.

Coming at a time when the nation is looking to the construction industry to help relieve present conditions of unemployment the increased participation of the Federal government in the cost of trunk line routes will have a generally stimulating effect. While the larger Federal allotment is a comparatively small percentage of the total annual expenditures for highway improvement the new act has other influences of far-reaching importance. Primarily it gives continued assurance of proper selection and coordination of routes, sound design and construction and adequate engineering supervision in all States availing themselves of Federal Aid.—Construction Methods.

TRANSACTIONS OF DEPARTMENT MEETING

(Continued from page 3)

floods, is now before the Congress. The restoration work covers the years 1926, 1927, 1928 and 1929, carefully itemized and totaling about \$700,000.00.

Holmes County's bond money — \$85,000.00 — for grading Road No. 88 has been turned over by the County to the Department, with proper security from the Bank of Bonifay which has the deposit, and a state force will begin construction work shortly.

The Department has been notified by County Attorney J. W. Hunter of Lake County that all right of way for Federal Aid Road No. 2, Tavares to Mt. Dora, has been secured. Mr. Hunter has been requested by the Department to record the right of way deeds and send them to the Department; also to have Lake County's Bond Funds (about \$90,000), which were voted for this road, deposited to the credit of the Department. After the money has been deposited and sufficient collateral placed for its security, the Department will proceed to ask for bids for construction of this project.

The Perry Banking Company, through Hon. J. H. Scales, has offered to purchase \$19,000 of the \$75,000 of Dixie County time warrants now held by the Road Department as Dixie County's contribution to the construction of Road No. 19. The bank offers ninety on these securities. Mr. Scales states that his bank would possibly take an additional \$6,000 of these securities at this same price on July 1 of this year.

The State Treasurer, W. V. Knott, for the State, offers to buy \$50,000 worth of Taylor County's bonds at a price that will yield 6% interest during the life of the bonds, if this offer is acceptable to the Department and Taylor County. The County holds the bonds and has offered the Department \$116,000 of these bonds as the county's portion of the expense of hard-surfacing Road No. 19 from Perry north to the Madison County line.

R. C. Fergus, Engineer in charge of the Third Division, with headquarters at West Palm Beach, has resigned. His place was filled by R. L. Bow of Miami.

Henry Wilson, Engineer in charge of the Fifth Division, with headquarters at Lakeland, has resigned. His place was filled by appointment of R. K. Van Camp of Bradenton.

W. I. Nolen of the Kentucky Highway Department has accepted the appointment as our Bridge Engineer, succeeding George L. Derrick, who resigned several months ago. Mr. Nolen is highly recommended as a bridge engineer.

Sincerely yours,

ROBERT W. BENTLEY, Chairman.

St. Johns County—Road 4—San Sebastian River Bridge

Mr. Frank J. Parker of St. Augustine appeared before the Department and asked that steps be taken to ask for bids for the early construction of the San Sebastian River Bridge on Road 4. He was informed that the Department is not in a position to comply with this request, as it has not yet been able to secure an acceptable route through St. Augustine.

On motion of Mr. Hills, seconded by Mr. Graham, the following resolution was adopted:

BE IT RESOLVED, that the State Highway

Engineer take up the matter of securing a satisfactory route for State Road 4 through St. Augustine to the San Sebastian River and that when this has been accomplished that the same be followed up by the working out of plans for the construction of said bridge.

Okeechobee County—Road 29

Mr. Peter Tomasello again presented to the Department the matter of an acute drainage situation near Road 29 in Okeechobee County, and said that since the morning session he has been reliably informed that the Drainage Board will be willing to detail an engineer to act with an engineer of the Department in ascertaining the cause and remedy for said condition.

On motion of Mr. Graham, seconded by Mr. Shands, the following resolution was adopted:

BE IT RESOLVED, that this Department do comply with the request of Okeechobee County and detail an engineer to make a survey with the view to ascertaining the cause and a remedy for unusual flood conditions which have developed near Road 29 in said county.

BE IT FURTHER RESOLVED, that the Board of Commissioners of Everglades Drainage District be requested to detail one of its engineers to act in conjunction with the engineer of the Department provided for by this resolution.

Road 20—Bay and Jackson Counties

The Chairman stated that he proposed to advertise for bids for the rock necessary in the construction of State Road 20 in Bay and Jackson counties returnable at the July meeting of the Department, and that the contractors bidding on same would be requested to submit their bids on the basis of furnishing all machinery and equipment necessary in the work, the Department to supply the convict labor and small tools.

On motion of Mr. Martin, seconded by Mr. Shands, the following resolution was adopted:

BE IT RESOLVED, that the Chairman be and he is hereby requested to advertise for bids for a rock base on State Road 20 in Bay and Jackson counties, the same to be returnable in June.

BE IT FURTHER RESOLVED, that in advertising for said bids, that contractors be requested to submit their proposals on the basis of furnishing all supplies, labor, materials and equipment, except convict labor and small tools which will be furnished by the Department.

Clay County—Project 659—Road 3—Claim of H. B. Garrett

Mr. Hills brought to the attention of the Department the claim of H. B. Garrett for alleged damages to his property, occasioned by the construction of State Road 3 through his property on a line away from the right of way granted therefor.

On motion of Mr. Hills, seconded by Mr. Graham, the following resolution was adopted:

BE IT RESOLVED, that the Chairman of this Department be authorized to appoint an appraisal board to investigate the claim of H. B. Garrett for damages alleged to have been done his property by the construction of State Road 3, and make a report to the Chairman.

BE IT FURTHER RESOLVED, that the Chairman be and he is hereby authorized to settle with

Mr. Garrett on the basis of the report of said appraisal board, in the event that said board shall report damage to the property of Mr. Garrett by reason of the Department's operations.

The Chairman announced that he would appoint as the appraisal board provided for by the foregoing resolution, Mr. W. A. Shands, Member of the Department, and B. A. Meginniss, Attorney for the same.

U. S. Geological Survey

The State Highway Engineer stated to the members that he had recently been in communication with the U. S. Geological Survey and had learned that this organization will cooperate with any governmental branch which will assist them in doing their work, and suggested the possibility of the information which they collect being of considerable value to the Department in its road construction operations.

On motion of Mr. Hills, seconded by Mr. Graham, the following resolution was adopted:

BE IT RESOLVED, that the State Highway Engineer be authorized and instructed to take up with the officials of the U. S. Geological Survey the matter of cooperative work which would be available to this Department in the event that the Department decided to contribute funds towards said work.

BE IT FURTHER RESOLVED, that in the event that he shall find that such information will be of value to the Department and will result in a saving of monies to the State, that the Chairman be and he is hereby authorized to expend not to exceed the sum of \$2500 for the purpose of such cooperation.

State Road 143—Palm Beach County

The Department took up consideration of the request submitted by Palm Beach County in the morning session, to the effect that Palm Beach County be relieved of its obligation to pay to the Department the balance of \$39,000 due on account of repairs and reconstruction of State Road 143.

On motion of Mr. Graham, seconded by Mr. Shands, the following resolution was adopted.

BE IT RESOLVED BY THE STATE HIGHWAY DEPARTMENT OF THE STATE OF FLORIDA, that, whereas State Road No. 143 was seriously damaged and made practically impassable by the disastrous hurricane of 1928, and

WHEREAS, the re-construction of said road properly would come within the purposes of the ten per cent emergency fund created by legislative act, and

WHEREAS, the cost of such re-construction was previously estimated at that time to be \$150,000.00 to \$200,000.00, of which amount \$50,000.00 or approximately 25% was agreed to be contributed by the County of Palm Beach, and

WHEREAS, the actual contract for the rehabilitation of this road amounts now to approximately \$104,000.00, on account of which the County of Palm Beach has already paid \$11,000.00 cash, therefore, in view of the reduced cost of the actual work required to be done to rehabilitate State Road No. 143 and in further consideration of the cash contribution already made by Palm Beach County, it is hereby

RESOLVED, that the amount so paid to date represents the county's fair share in this reconstruction, and it shall be and is hereby relieved of any further payment on account of its subscription, made

at a time when the total cost of the work involved was believed to be considerably in excess of what it is now known to be.

Explanation of Vote

Mr. Hills offered the following explanation of his vote on the foregoing resolution relating to State Road 143 in Palm Beach County:

"My favorable vote is cast solely in view of my understanding that the completed cost of this road to the Highway Department will be approximately \$50,000 less than that contemplated at the time the agreement with Palm Beach County was entered into and the then proposed extent of Palm Beach County's contribution was determined."

Department Meeting

On motion of Mr. Graham, seconded by Mr. Shands, the following resolution was adopted:

BE IT RESOLVED, that when the Department adjourns that it adjourn to meet at the City of Tampa on Tuesday, the 10th day of June, 1930.

Hillsborough County—Road 17—Bridge Over Hillsborough River

On motion of Mr. Shands, seconded by Mr. Graham, the following resolution was adopted:

BE IT RESOLVED, that the Chairman and State Highway Engineer be requested to investigate the matter of the failure of the bridge across Hillsborough River on the proposed route of State Road 17 and make a report at the next meeting of this Department.

State Road 10—Unpaved Portions

The Chairman brought to the attention of the members the condition of the grade on State Road 10 west of Panama City, and suggested that the monies in the present year's budget available for the hard-surfacing of two projects in Okaloosa and Bay Counties be applied to sand-asphalting the sandy stretches of said grade and to placing the remainder of said grade in a similar travelable condition.

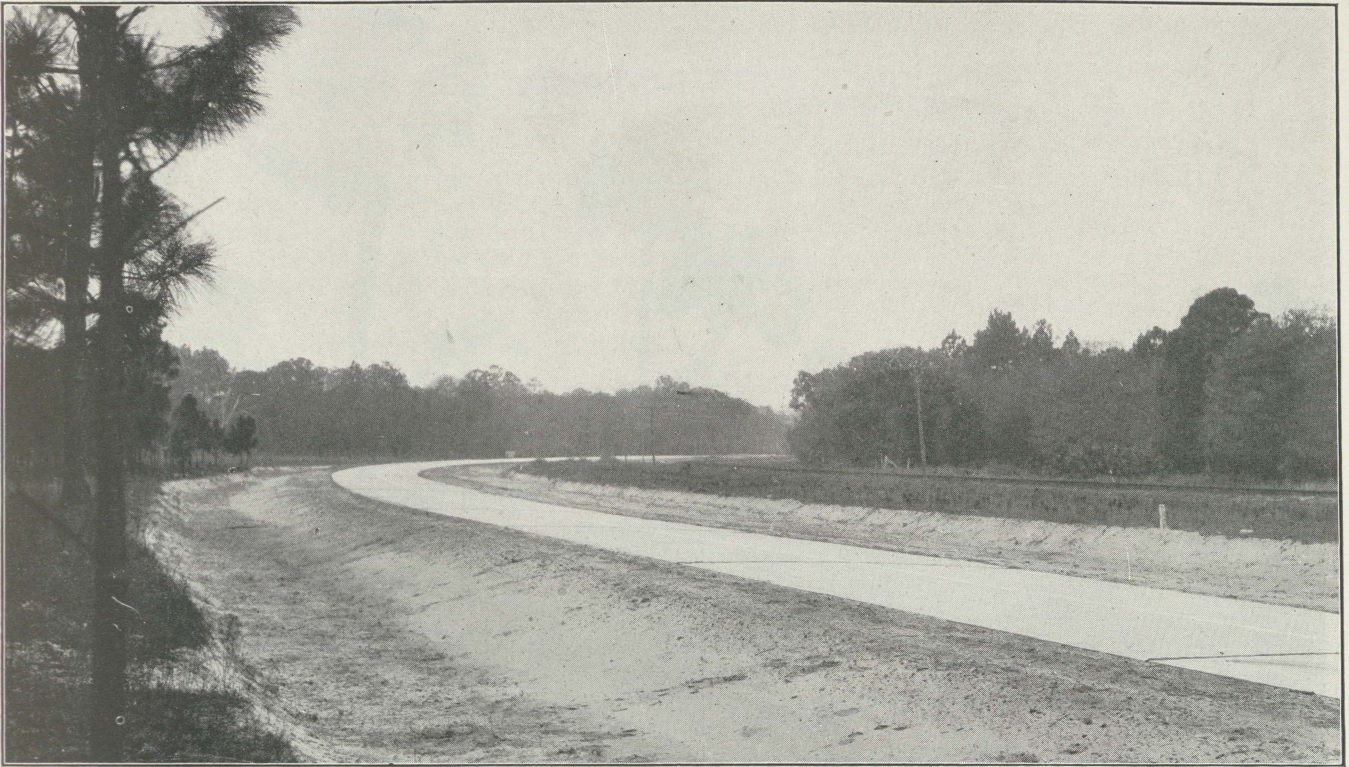
On motion of Mr. Hills, seconded by Mr. Martin, the following resolution was adopted:

BE IT RESOLVED, that the recommendation of the Chairman as to State Road 10 west of Panama City be and the same is hereby adopted, and that the Department do apply the monies applicable in the present year's budget for the hard-surfacing of two projects in Okaloosa and Bay Counties, to making travelable and smoothing the clay or hard section of the grade, and to applying a sand-asphalt to the sandy sections of said grade along the whole of said road west of Panama City.

Taylor County—Road 19

The Chairman stated to the members that he has received an offer from the State Treasurer to take \$50,000 of the bonds which Taylor County proposes to turn over to the Department for hard-surfacing that section of Road 19 between Perry and the Madison County line, the said offer of the State Treasurer being at a price which will yield a 6% return on said bonds during their life, or in the neighborhood of 92.15. The Chairman recommended that this offer be accepted either by the Department or by Taylor County, and that Taylor County be requested to turn over to the Department the remaining \$66,000 of said bonds which it has applicable for the purpose mentioned.

On motion of Mr. Shands, seconded by Mr. Graham, the following resolution was adopted:



BE IT RESOLVED, that the Chairman be and he is hereby authorized to take up with the Board of County Commissioners of Taylor County the offer of the State Treasurer as reported by him to this meeting, and to suggest to the County Commissioners that they sell the same to the State Treasurer and turn over to the Department the balance of \$66,000 of said bonds, or that the said Board of County Commissioners turn over to the Department the whole block of \$116,000.00 of said bonds and that the Department do sell \$50,000 thereof to the State Treasurer at the price already offered by him.

Dixie County—Road 19—\$75,000 Time Warrants

The Chairman reported to the members that he has had an offer of 90% for \$19,000 of the \$75,000 of 6% Interest Bearing Coupon Time Warrants which were delivered by Dixie County to the Department for the construction of Road 19.

On motion of Mr. Shands, seconded by Mr. Graham, the following resolution was adopted:

BE IT RESOLVED, that the Chairman be and he is hereby authorized to advertise for bids for the sale of all or any part of the \$75,000 Dixie County 6% Interest Bearing Coupon Time Warrants which are owned by this Department.

U. S. Highway 19—Extension

The Chairman submitted to the members a letter from Mr. J. G. Stikeleather, member of the State Highway Commission of North Carolina, introducing Mr. Roscoe Marvel, who brought to the Department a request that the Department urge the American Association of State Highway Officials to secure the extension of U. S. Highway 19 from Tallahassee down the west coast of Florida to Bradenton. The Chairman recommended that the request be complied with.

On motion of Mr. Hills, seconded by Mr. Graham, the following resolution was adopted:

BE IT RESOLVED, that this Department do adopt the recommendation of the Chairman, and that he be and he is hereby authorized to request the American Association of State Highway Officials to secure the extension of U. S. Highway from Tallahassee to Bradenton by way of the following roads: State Road 19 from Tallahassee to Williston, U. S. Highway 41-State Road 5 from Williston to Brooksville, thence over State Road 15 to St. Petersburg and thence via Piney Point ferry across Tampa Bay to Piney Point, intersecting a Manatee County highway and via that road a distance of ten miles to join U. S. Highway 41-State Road 5 at the highway bridge which connects the municipalities of Palmetto and Bradenton.

Lots At Hawthorn

The Chairman presented to the members a letter from Mr. Shands, member of the Department, stating his judgment that a fair value for the lots at Hawthorn which the Seaboard Air Line Railway has offered to the Department for sale is \$50.00.

On motion of Mr. Bentley, seconded by Mr. Hills, the Chairman was authorized to offer the Seaboard Air Line Railway the sum of \$50.00 for the said lots.

Road 5—Levy County

A letter from the Clerk of the Circuit Court of Levy County addressed to the Chairman was read, with which was submitted a bill for wire and staples to be used along State Road 5 in said county and amounting to \$734.50, which bill the Department was requested to pay. No formal action was taken on this request.

Road Through Grounds of University of Florida

The Chairman submitted to the members a letter from the Secretary of the State Board of Control expressing the regret of that organization that it is not in a position to furnish the materials necessary for



the construction of a road through the grounds of the University of Florida at Gainesville, as requested at the last meeting of this Department. The Chairman was requested to renew the offer of this Department to construct the road if the Board of Control will furnish the necessary materials.

Martin County—Road 4

The Chairman submitted to the members a resolution adopted by the City Commission of Stuart, requesting the Department to examine into damage which has been done to the crops of the farmers within the city of Stuart by reason of an excess flow of water, which they claim is due to inadequate drainage of State Road 4.

On motion of Mr. Hills, seconded by Mr. Shands, the following resolution was adopted:

BE IT RESOLVED, that the State Highway Engineer be and he is hereby requested to make an investigation of the alleged inadequate drainage of State Road 4 at Stuart and to make a report of his findings to the Chairman of this Department.

BE IT FURTHER RESOLVED, that in the event that an emergency is found to exist, the Chairman be and he is hereby authorized to take such steps as are necessary to remedy the situation.

State Road 13—Hampton

Mr. Shands called to the attention of the members a flood condition which has resulted on the south side of Hampton on State Road 13 which may be due to inadequate drainage of State Road 13.

On motion of Mr. Shands, seconded by Mr. Hills, the following resolution was adopted:

BE IT RESOLVED, that the State Highway Engineer be and he is hereby instructed to make an investigation of the alleged inadequate drainage of State Road 13 at Hampton and make a report of his findings to the Chairman of this Department.

BE IT FURTHER RESOLVED, that in the event that an emergency is found to exist, that the Chairman be and he is hereby authorized to remedy the same.

State Road 115—Santa Rosa County

A letter from the Booster Club of Santa Rosa was presented to the Department, in which the Department was requested to maintain the finished grade on Road 115 between Destin and Santa Rosa, namely Projects 842 and 844-A.

On motion of Mr. Shands, seconded by Mr. Martin, the following resolution was adopted:

BE IT RESOLVED, that the Chairman be and he is hereby requested to look into the matter of the maintenance of Projects 842 and 844-A on State Road 115, and ascertain whether or not it is possible for the Department to take same over for maintenance.

State Road 17—Dover Drainage District

A letter from Mr. H. M. Pancoast was presented to the members, in which the writer complained that by reason of the filling of a ditch leading to concrete bridge on said road about half way between Tampa and Plant City, the water is held back on the lands adjacent to this point, and requested that the situation be remedied.

On motion of Mr. Shands, seconded by Mr. Graham, the following resolution was adopted:

BE IT RESOLVED, that the State Highway Engineer be requested to make an investigation of this situation and report his findings to the next meeting of the Department, to be held at Tampa, June 10.

Construction of Lime Rock Base and Surface Treatment

The Chairman and State Highway Engineer presented to the members of the Department a request from contractors of the State to the effect that hereafter, when the Department shall advertise for bids for the furnishing of materials for lime rock base and surface treatment on work where use of the State's convict forces is contemplated that the contractor be permitted to furnish everything except the convict labor and small tools.

On motion of Mr. Hills, seconded by Mr. Shands, the following resolution was adopted:

BE IT RESOLVED, that this Department does concur in the spirit of the request of Florida contractors, and that hereafter when the Department shall advertise for bids for the construction of lime rock base and/or surface treatment when it is the purpose of the Department to use convict labor, that proposals be asked on the basis of furnishing by the contractor all equipment, tools, labor and supplies necessary in the construction of such base, excepting the convict labor and small tools, which will be furnished by the Department.

AND BE IT FURTHER RESOLVED, that it shall be distinctly stipulated that the contractor shall not have any jurisdiction over or direction of such convict labor.

Correction of Minutes

On motion of Mr. Shands, seconded by Mr. Martin, the following resolution was adopted:

WHEREAS, by inadvertence a resolution duly adopted by this Department and relating to Road 19 in Liberty County was omitted from the minutes of the meeting of the Department held in January, 1930, now, therefore,

BE IT RESOLVED, that the minutes of the January, 1930, meeting of this Department be corrected by including therein the following resolution, to-wit:

Liberty County—Road 19

On motion of Mr. Martin, seconded by Mr. Perkins, the following resolution was adopted:

"BE IT RESOLVED, that this Department do accept the offer of Liberty County to turn over to the Department \$6,500.00 of county funds; and that upon receipt of said sum, that this Department do proceed to complete the grade on State Road 19 between Hosford and the Ocklockonee River."

Award of Contracts Approved

On motion of Mr. Hills, seconded by Mr. Shands, the following resolution was adopted:

WHEREAS, this Department, pursuant to due advertisement, received bids for the construction of a certain project and for the furnishing of certain materials and supplies as hereinafter listed; and

WHEREAS, the firms and individuals hereinafter mentioned were and are declared to be the lowest responsible bidders therefor; now, therefore,

BE IT RESOLVED, that the action of the Chairman in awarding contracts for the construction of such project and for the furnishing of such mate-

rials and supplies be and the same is hereby approved and confirmed.

BE IT FURTHER RESOLVED, that the awards so approved are as follows, to-wit:

Project 758—Road 2—Polk County Rock Base—Surface Treated

A. E. Campbell, Lake Wales, Slag Surface\$1,905.22

MATERIALS

Proj.	Road	Material	Bidder	Price.
730	15	Rip Rap	Standard Rock Co.	\$1,370.00
53-C	2	Rip Rap	Cummer Lumber Co.	2,460.00
577	19	Slag	Woodstock Slag Corp.	3,399.00
577	19	T. C.-1	American Tar Products	1,024.00
577	19	Oil Asphalt	Texas Company	1,138.83
40-E	4	Slag	Birmingham Slag Co.	2,762.10
40-E	4	Oil Asphalt	Atlantic Refining Co.	723.06
45	1	Rock Asphalt	Ky. Rock Asphalt Co.	2,112.00
835	5	Cold Mix Asphalt	Macasphalt Corp.	451.50
756	19	Reinf. Conc. Pipe	Shearman Conc.	
			Pipe Co.	425.00
750	14	2" Iron Pipe	Cameron-Barkley Co.	945.14
878	77	Reinf. Conc. Pipe	Shearman Conc.	
			Pipe Co.	925.40
876-A	78	Triplex High P. Pump	Harry P. Leu, Inc.	1,603.43
876-A	78	2" Iron Pipe	Cameron-Barkley Co.	2,874.00
		2850 gal. White Paint		
		Sherwin-Williams		5,700.00

Convict Supplies

200	Cotton Felted Mattresses, L. S. Brown, Atlanta, each	\$3.35
250	Cotton Felted Pillows, L. S. Brown, Atlanta, each	.53
1000	pr. Drawers, Bentley-Gray, Tampa, doz.	4.20
500	Undershirts, Bentley-Gray, Tampa, doz.	4.20
1000	pr. Shoes, Rivers Sales Co., Tallahassee, pr.	2.875
500	Hats, Dawson-Thornton, Tampa, doz.	2.00

Mule Feed

Rivers Sales Co., Tallahassee—Oats, Corn & Bran for Camps 2, 3, 4, 8, 30 and 33	\$3,070.75
Lewis Bear Co., Pensacola—Hay, Oats, Corn and Bran for Camps 26, 27, 31, 32, 36, 37, X	6,106.35
Geo. E. Eubanks, Tallahassee—Hay for Camps 2, 3, 4, 8, 30 and 33	2,045.40

Members' Expense Accounts Approved

On motion of Mr. Shands, seconded by Mr. Hills, the expense accounts of the members were approved, as follows:

W. A. Shands	\$24.60
R. W. Bentley	31.20
Geo. B. Hills	39.50

Minutes Approved

On motion of Mr. Shands, seconded by Mr. Hills, minutes of the meeting of the Department held April 9 were duly approved.

There appearing no further business, the Department was, on motion of Mr. Shands, seconded by Mr. Hills, adjourned to meet in Tampa, Tuesday, June 10, 1930.

Juror: "I can't serve on this panel, Judge. Just one look at that man convinces me he is guilty."

Judge: "That's not the prisoner. That's the prosecuting attorney."

Stories about movie stars getting married should end with a comma.

"Would you rather give up wine or women?"

"That depends on the vintage."

The latest motor cars, they say, have two horns attached—the first sounds a gruff warning and the second a parting sneer.

The Student's Opportunity in The Highway Industry

ENGINEERING students today who specialize in highway engineering will find many avenues of employment open to them as they go from the halls of learning to the beckoning fields of a life career.

Highway engineering means in a general sense all activities that have to do with the highway industry, sixth of the nation's industries from a standpoint of finance and ranking among the leaders in the number of people associated in it.

Last year, 5,651,000 motor vehicles were produced in the United States and Canada, with a valuation of some \$3,483,900,000. These, with those already in use, brought a total registration figure for the year of 26,400,000 motor vehicles, an 8% gain in registration over 1928.

Twenty-six million motor cars and trucks that have to have somewhere to go. Of the total 3,016,281 miles of highways in the United States, 660,000 miles are surfaced. The rest range from mountain trails to fairly serviceable secondary roads.

These facts show plenty of work ahead for the road builders. Automobile registration grows by leaps and bounds. Highways must keep the pace. There is no other solution to the increasingly difficult traffic problem.

The vast scope of the highway industry is of such a nature as to affect the daily life of every citizen of every nation of the world, for there are not many nations today that are not building roads or planning to build them. At least they are hoping for them.

In the United States, more than a quarter century of time has elapsed since the first "road enthusiasts" endured the jeers and the criticism of those who said that "it couldn't be done." It is a far cry from the mud wallows and the forest trails of those days to the efficient and magnificent boulevards that stretch, wide and smooth, across the far reaches of our country today.

The American public has not failed to appreciate the benefits that followed in the wake of the good roads movement. If they were unappreciated at first, they have caught the enthusiasm in recent years, for the evident facts could not be ignored.

When Congress this year took up the question of adding an additional \$50,000,000 yearly to the present \$75,000,000, which is given the states to build the highways in the Federal Aid program, there was little, if any, adverse comment. Both the Senate and the House of Representatives quickly passed the bill, although it became tangled later in legislative red tape. President Hoover had previously urged the increased construction of highways as an aid to national prosperity and to alleviate the unemployment situation, and he had also encouraged road building in his message to Congress.

Abroad, the nations that have been active in road building have likewise reaped the benefits of their efforts, and they, like the United States, are now ready to increase their programs and spend greater sums than ever before for highway systems.

With the possible exception of a few of the European nations, such as England, France, Germany and Italy, most foreign countries lag far behind the United States, not only in the amounts they spend for roads but in their methods of construction. They

lack, also, the modern machinery which American manufacturers produce.

Russia at present is spending vast sums for machinery in this country and American highway engineers are in great demand there to build roads on the American plan. The soviet government has made great appropriations of government money for road construction. China and Africa are also awakening to their need of highways and these great expanses of undeveloped country offer an outlet, bewildering in its scope, for American highway materials and man power.

This nation unquestionably leads the world in its advancement in the highway field. The methods of a quarter-century ago in vogue, when road funds were considered as political "plums" and all highway contracts were entangled in a skein of political trading, when highway officials were named as a reward for service to their political masters rather than for their engineering skill, are fast disappearing.

Business efficiency has entered the field. The system with which Federal Aid is distributed to the States, and by which the primary highways are being rushed to completion; the building of city streets by municipal government and of county and secondary highways by local units; all are subject first to comprehensive and cooperative planning such as never has been known before. Traffic needs are studied, commercial advancement is considered, serving the greatest ends to all the people are the elements which decide where the public funds shall be spent in road construction.

Financing has been developed to a point where a certain sum does not now have to be collected by taxes in the public treasury before such amount may be turned over to road authorities. Bonding has proven thoroughly reliable for raising highway finances, for in every case where applied to state, city or county units, the returns have been immediate and gratifying, and have entirely justified the method.

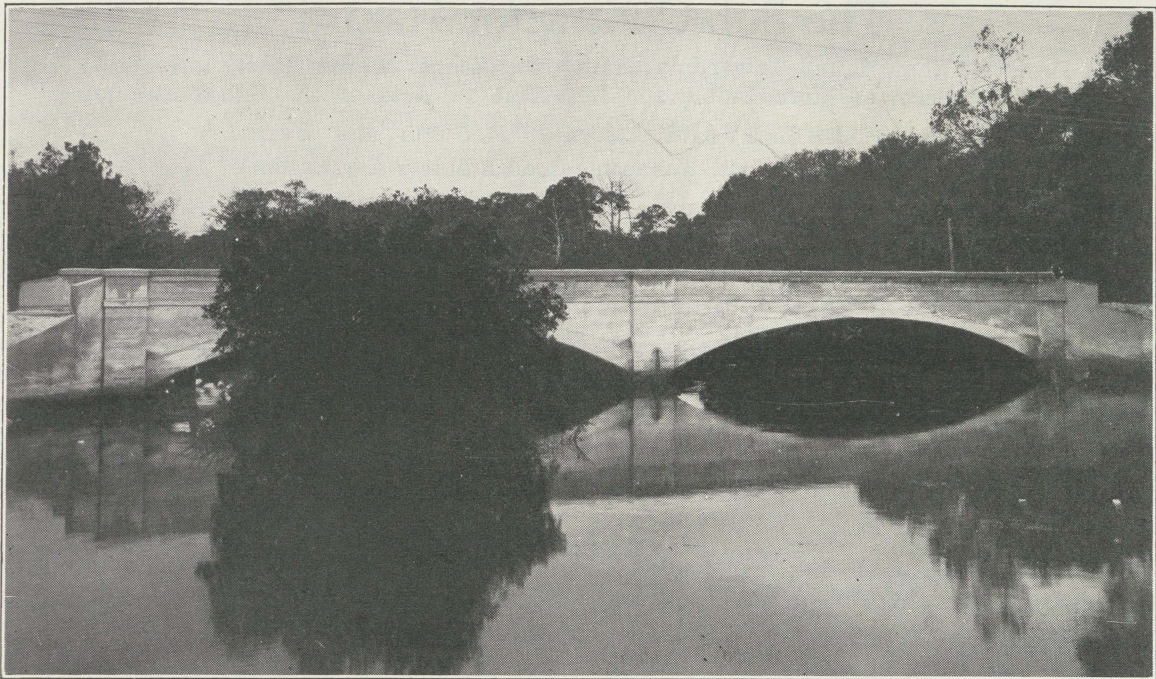
Gas taxes amounting to \$450,000,000 and motor vehicle taxes in the amount of \$925,000,000 have been applied annually to develop great sums which should be, and in most cases are, immediately made available for extension of the field of motor vehicle use.

Participating factors in the great highway industry are many and varied.

The numbers of manufacturers of highway machinery and equipment have grown into the hundreds, which has developed healthy competition. Each manufacturer is striving to bring new and improved products into the field. Great research departments are at work, year after year, to bring forth speedier equipment which will build more roads, in less time and at greatly lessened cost.

New methods of surfacing and new products for road surfaces are being studied out in laboratories and after careful and comprehensive tests, placed on the market.

Annually, the leading manufacturers hold an exhibition of machinery and materials, known as the "Road Show" which is sponsored by the American Road Builders' Association. This organization, made up of members from all branches of the industry, spends its energies in a vast program of research and education, with the annual exposition supplemental



to the convention of members to hear the reports of the year's work of its fifty or more research committees. These reports are made from a study of present practices with recommendations for improvement and progress.

The engineering and sales departments of the manufacturing establishments are ever on the alert for suggestions from the contractors, who have the actual building operations in hand, and from the State, city and county officials, under whose supervision the road programs are carried out.

The modern contractor has a much more difficult task to meet with the high-class specifications which are a part of road construction bids. He must needs have an efficient establishment with the best of machinery, highly-trained engineers, and probably of most importance, he must be thoroughly reliable.

The official road building department of the state or city, in most cases, consists of well paid, specially trained men, who make engineering their profession, and whose chief aim is thought to be service to the people in discharging the public trust. This holds true in many counties, but there is much chance for development in most counties.

In its various divisions, the American Road Builders' Association serves the entire field. Its Pan-American Division has been a potent force in awakening Latin America to an extent where Mexico, Cuba, Argentina, Brazil, Colombia and other nations are in the ranks of the first ten foreign nations as purchasers of highway machinery from the United States.

To all of Latin America, and through its European Division, to all of Europe and the Orient, the Association offers without charge its knowledge of financing and engineering which has in practice here, made the United States the first nation in the world in road building.

Its research has been availed of and its publications eagerly read and applied to practical use, and its functions in the foreign field have grown in importance yearly, almost daily.

During 1929, the association made studies in behalf of its City and County Highway Officials' Division, on such subjects as:

- Highway financing and legislation.
- Regional surveys and plans.
- Administration.
- Organization.
- Equipment: purchase, depreciation, and standardization.
- Location.
- Design and construction.
- Grading methods and equipment.
- Subgrades and pavement bases.
- Drainage.
- Surfacing and resurfacing.
- Maintenance.
- Traffic—grade crossings.
- Snow removal.
- Street cleaning.
- Municipal airports.

Of particular interest to contractors were the researches in the field of liens in public construction and of prequalification of bidders.

New projects for study and research will be added to the 1930 program of this organization. The reports are prepared through studies of the various committee members, each noted for his work in the specialized field, coordinated through contacts of a paid engineer-investigator who is devoting his time to the particular work of his committee.

Many other organizations in the highway field are making noteworthy progress in bettering the conditions of their particular branch. The producers of concrete, asphalt, brick, crushed stone, sand and gravel, have national associations which devote a great portion of their time and funds to research and improvement of the industry.

The United States Bureau of Public Roads functions as a national supervisory body in the expenditure of federal appropriations to the road program,

(Turn to page 23)

The Sub-Contractor Hazard

Recent Court Decisions Show Trend Toward Widening the Scope of the Surety's Liability—Principal Contractor Becomes More Liable for Loss Due to Acts of the Sub-Contractor

By GILES L. EVANS, Attorney, McGugin and Evans.
(Legal Counselors, Tennessee Road Builders Association)

LO, THE subcontractor, he is with you always! And more and more must the principal contractor in public road building exercise caution to guard against losses on account of the sub-contractor.

The Tennessee Highway Department has never recognized the sub-contractor, as such, in construction work done under Chapter 74 of the Acts of 1917 and amendatory acts. That is, the Department has never approved a sub-contract so as to substitute the sub-contractor for the principal contractor in performing obligations of the principal contractor, either to the State, or to materialmen and laborers. This is true in practically all the other States. The Department has always considered the sub-contractor as but an employee of the principal contractor.

Furthermore, in the case of Southern Construction Company v. Halliburton, 149 Tenn., it was virtually held that the principal contractor stands in exactly the same relation to the sub-contractor as the surety on the principal contractor's bond is to the principal contractor. If work or material is furnished the sub-contractor which, if furnished to the principal contractor, would make the surety liable on the principal contractor's bond, the principal contractor is liable therefor. In other words, he is surety for the sub-contractor.

Therefore, as suggested by Judge DeWitt, in the late case of Rambo v. Naylor Engineering Company, it behooves the principal contractor to protect himself against this liability by requiring proper guarantee or bond from his sub-contractor.

Scope of Surety Bond Widened

Especially is this more true because of the modern tendency of all the courts to broaden the scope of the surety's liability and, therefore, the contractor's liability for his sub-contractor. For instance, in the case of Rambo v. Naylor Engineering Company, the contractor was held liable for ice, ice water, etc., furnished the laborers of the sub-contractor, for hauling the laborers of the sub-contractor to and from the work, there being no boarding house in the vicinity, for small repairs, etc. This is in keeping with the trend of decisions in other States.

On December 31, 1929, in the case of Western Material Co. v. Enke, the Supreme Court of South Dakota held the surety liable for repair items becoming necessary to keep the machinery of the contractor in operation for the performance of the contract.

On January 13, 1930, the Supreme Court of Alabama in the case of Union Indemnity Co. v. Handley, under a contract in almost the exact language of Tennessee's statute, held the surety liable for food for laborers, clothing furnished to laborers, tobacco, cigarettes, small tools, harness, small articles such as soap, cups, tubs, buckets, brooms and spoons, on the theory that these were "materials and supplies" within the meaning of the contract. Of course, our statute does not include "supplies" but it is a simple step to reason that "materials" used in such a contract or statute and "supplies" are synonymous.

On January 8, 1930, the United States District Court for the District of Idaho in the case of United States v. F. & D. Co. of Maryland, held the surety liable for merchandise and materials furnished to the contractor in building a government road, where the work was located some distance from any settlement, there being no boarding houses, and the sub-contractor had to provide board and lodging for his laborers. In the case of State v. Aetna Casualty & Surety Co., January 9, 1930, the Supreme Court of Delaware held that the bond covered freight charges on material and that such transportation was "labor" within the meaning of the statute and regardless of the length of haul.

Under a bond providing payment to those "doing work or furnishing skill, tools, machinery or materials under and for the purpose of said contract," the United States Circuit Court of Appeals, Fifth Circuit, on February 26, 1930, held that the bond covered freight, switching and demurrage charges on a carload of materials in the case of City of Stuart v. American Surety Company.

On February 28, 1930, the Supreme Court of California in the case of Hammond Lumber Co. v. Richardson Building & Engineering Co., held that where the materialman had accepted a note for materials furnished the contractor, this did not relieve the surety.

On March 12, 1930, the Supreme Court of California, in the case of Ryan v. Shanahan, held that one who rented and transported a gasoline shovel to the contractor, used in constructing a railroad, could recover on the bond of the contractor conditioned for the performance of the work and the payment in full of claims of all persons "performing labor done or furnished materials to be used in such construction work."

In effect it was held on March 11, 1930, by the Supreme Court of Iowa, in the case of Ryerson & Son v. Schraag, that payment to the first sub-contractor by the principal contractor does not relieve the principal contractor from a claim of a sub-contractor under this first sub-contractor.

On March 20, 1930, in the case of State ex rel. v. Southern Surety Company, the Supreme Court of Alabama held that the principal contractor and his surety were liable for gas, oil, tires, feedstuffs and material furnished the sub-contractor.

The Supreme Court of Florida on March 28, 1930, in the case of Union Indemnity Co. v. State, held that under certain conditions the surety for the contractor was liable for groceries furnished to the contractor to feed and take care of his laborers at his camp.

Opposite Decisions in Minority

There are a few recent cases that follow the opposite trend and narrow the scope of liability but these are in the minority. For instance, on January 6, 1930, in the case of Commonwealth v. Union Indemnity Co., the Supreme Court of Pennsylvania under an act providing for payment for material furnished

and labor performed "in and about the construction of said highway"—again in almost the exact language of our statute—held that oils, gasoline and Ray-O-lite used in operating excavation shovels, and dynamite and explosives, were not covered because they did not actually enter into and become an integral part of the complete project.

Another case limiting the scope of liability and relieving the surety, though not in conflict with *Union Indemnity Co. v. Handley*, is the case of *Royal Indemnity Co. v. Flutmes*, decided by the Court of Appeals of Ohio January 20, 1930, holding that where one rents his machinery to the contractor and makes repairs to the machinery to keep it working he can not recover from the surety on the contractor's bond for these repairs as such repairs were not labor and materials "which have gone into and become a part of the work." The court intimates that the surety is liable for no repairs to machinery of the contractor, whether owned by him or rented.

Holding that transportation charges are not in general proper charges against the surety, in the case of *Nemah River Towboat Co. v. Brewster*, July 3, 1929, the Supreme Court of Washington held the surety liable for water transportation, to-wit: towage.

The sub-contractor recovered against the surety although the contractor had given the sub-contractor his notes for the amount due, it appearing that the extension had not been unreasonable and had not prejudiced the surety. This was so held by the United States District Court for the Western District of Pennsylvania, October 23, 1929, in the case of *Board of Public Education v. Standard Insurance Co.*

The Supreme Court of Louisiana, December 4, 1929, in the case of *Murphy Iron Works v. U. S. F. & G. Co.*, held that the surety on a canal contractor's bond is not liable for repairs to a dredge boat and its machinery nor for freight and express charges on material because same did not consist of work done nor material furnished "which entered directly into the improvement."

Therefore, the clear trend of the modern decisions being to extend the scope of liability more and more to embrace all necessities for the proper completion of construction contracts, and the contractor standing in the relation of a surety for the sub-contractor, liable in the same way and to the same extent on account of such necessities furnished to the sub-contractor, in many cases it will save the general contractor substantial losses if he will require and take proper indemnification from his sub-contractors. Naturally this applies just the same to the sub-contractor with respect to his own sub-contractor, his own liabilities and his own protection.—Tennessee Road Builder.

Third Decree

Overheard as a somewhat flustered young thing descended from the sedan: "Say, Mayme, I see you been on the rumple seat."—Boston Herald.

Tim: Do you love me?

Mazzie: Yes, Bill, better than anyone.

Tim: But I'm not Bill.

Mazzie: Oh, I thought today was Wednesday.

Just Come To

"So you were up to Montreal last week, eh?"

"Yeh—that's what I hear."—Life.

"Eliza," said a friend of the family to the old colored washerwoman, "have you seen Miss Edith's fiance?"

Eliza pondered for a moment, then bent over the laundry tubs once more. "No, ma'am," she said, "it ain't been in the wash yet."

Try This One

Mrs. Willis (sternly, to husband arriving home at 3 a. m.): "What does the clock say?"

Mr. Willis (genially): "It says, 'tick-tock,' and the doggies shay 'bow-wow,' and the little pussies cats shay 'meow-meow'."

The Cause

Examination Teacher: "Charlie, what does your father do when he finds anything wrong with his car?"

Charlie (truthfully): "He bawls Ma out."





New Highway to Honor Wright Brothers

Kittyhawk Will Be Mecca of Motorists If Plans Are Fulfilled

By HAMILTON M. WRIGHT

THE recent stabilization of Kill Devil Hill, the world's most famous moving mountain of sand, near Kittyhawk, N. C., permitting it to be used as the base of the proposed national memorial to the Wright Brothers has resulted in a project for a highway to the memorial along the barrier beach which follows the Virginia and Carolina coasts.

The projected highway will be one of the most spectacular drives in the country. It will follow the barrier dunes which separate the ocean from the great winter feeding grounds of millions of aquatic birds in Back Bay, North Bay, Ships' Bay, Currituck Sound, Albemarle Sound, Croatan Sound, and Pamlico Sound.

The proposed highway will have its objective the massive Kill Devil Hill, an enormous cone of sand, rising 97 feet from a 26-acre base. This former wandering mountain became known throughout the world when Orville Wright on December 17, 1903, flew from its base in the first airplane to take off by its own power, carrying a man safely in free flight, and landing without accident.

In the succeeding 25 years, Kill Devil Hill, under the impulse of the prevailing northeast winds, moved 500 feet in a southwesterly direction. A survey made in 1928 shortly after Congress decided to erect a monument revealed its progress at 20 feet per annum.

The proposed highway leading from Virginia Beach south, will also have as its objective a government sanctuary of 500 acres which will be declared a National Monument. This will include the hill and an aviation field to be constructed in the vicinity.

The highway project became practicable when it was discovered that Captain John A. Gilman, Constructing Quartermaster, U. S. Army, had succeeded in preventing the forward movement of the hill. It then became known that the government could go on with its plans to erect the monument and create the sanctuary.

A small granite monument erected on the spot where Orville Wright took off in his first successful airplane flight, at that time near the base of the hill, has now moved a distance of 500 feet further away. It would have been impossible to have kept any structure at the top of its shifting pyramid of sand which is the highest point along the whole barrier beach. In the next one hundred years, the hill, had it not been stopped, would have advanced almost half a mile, leaving the memorial engulfed by the sands. The hill had increased several feet in height since Wilbur Wright's take-off in 1903.

Captain Gilman told me the other day that the hill has not moved an inch in the past six months, despite the strong, northeast gales of the past winter. Since October 1928, he has covered an area more than two hundred feet wide around the base of the hill as well as a large part of the northern and eastern sides with wood mould two inches deep. On this wood mould he has planted various native and imported grasses with strong widely spreading root systems whose tops reach two to four feet in height. These plants have become firmly established, and now prevent the wind from getting at the sand. Fourteen acres have been sown at a cost of \$20,000, and Con-

gress has appropriated \$7,500 to plant the remaining 12 acres.

The assurance that the monument will be permanently installed has led the North Carolina Road Department to authorize a fine boulevard along the barrier beach from Nag's Head in the south, past Kill Devil Hill, to Kittyhawk.

Nag's Head is already connected with Roanoke Island by a new road and bridge, while construction of a bridge over Currituck Sound from Point Harbor to Kittyhawk, which had been started but was temporarily delayed, will soon begin again under the stimulus of the new national attraction at Kittyhawk.

The execution of these road projects will make it easy to behold the monument. The only practicable route from Norfolk to Kittyhawk at present is by Great Bridge, Currituck, Point Harbor and a ferry from the latter point to Kittyhawk. This road is all paved to within ten miles of Point Harbor, and a rough but always passable clay road the rest of the way. The road to Nag's Head is only a part of the ultimate project. Plans are now being agitated to extend this ocean-going road from Nag's Head further down the barrier beach, across Hatteras Inlet, then over Ocracoke Inlet and on to Moorehead City. Such a road, from Virginia Beach to Moorehead City, would probably be the most spectacular highway ever built in this country. It would, on the basis of the beach contours, be approximately 206.7 miles in length. The road would be much longer than the famous Overseas Highway between the Florida mainland and Key West. But it would not present the tremendous engineering difficulties of that stupendous road across the Gulf and Florida Keys. The barrier beach affords a firm foundation and there are only a few comparatively narrow inlets to be bridged. The coast survey map shows most of them are relatively shallow at most all points.

The distances from Virginia Beach, south down the beach are as follows:

From Virginia Beach to North Carolina State Line 20 miles.

From Virginia Beach to Kittyhawk 56 miles.

From Virginia Beach to Kill Devil Hill 60.8 miles.

From Virginia Beach to Nag's Head 66.3 miles.

From Virginia Beach to Oregon Inlet 77.8 miles.

From Virginia Beach to Cape Hatteras Lighthouse 116.5 miles.

From Virginia Beach to Ocracoke 144.1 miles.

From Virginia Beach to Cape Lookout Lighthouse 190.6 miles.

From Virginia Beach to Moorehead City, 206.7 miles.

It is only within the last generation that the route now planned between Virginia Beach and Nag's Head would have been practicable; its possible extension way down past Cape Hatteras to Moorehead City would have been almost impossible.

Within the memory of oldest inhabitants the beach was interrupted by a series of inlets. In the time of Capt. John Smith, the nucleus of the present beach was a chain of small islands, which have reformed and thus created the beach and converted the backwaters and bays which have been reclaimed from the ocean, into a sportsman's paradise.

By this new ocean highway to Kittyhawk and

Nag's Head the memorial to the Wright Brothers will be speedily reached from the Atlantic Coastal Highway. From Norfolk one will be able to reach Virginia Beach, a populous resort with fine bathing and boating facilities and golf links, in 45 minutes. At the hours of low tide it is possible now to make the fifty-three mile drive down the beach to Kittyhawk in little over an hour, and it will take little longer to reach the Wright Brothers Memorial and drive on south to Roanoke Island. When the new highway is completed the drive can be accomplished without reference to tide condition for the highway will be hard, reinforced, and moderately constructed.

Every mile of the trip will be of interest. The barrier beach was accounted a wild and dangerous coast in the early days. Nag's Head, in fact, received its name from a quaint old custom of tying a light to a horse's head and leading it up and down the beach after nightfall to lure ships to their destruction. Going south from Virginia Beach you pass eight or ten life saving stations. The State of Virginia rifle range is the first point south, then the Dam Neck Life Saving Station, the Croatan Club, a hunting reserve of wealthy men. You pass Back Bay, North Bay, Currituck Sound, Albemarle Sound, and Croatan Sound, all famous wild fowl winter feeding grounds, and around these waters are numerous gunning clubs owned and operated by many wealthy men. W. E. Corey, past-president of U. S. Steel, V. E. Barbour, thread manufacturer, Stone of Stone and Webster, Henry Steers, the construction man, Thomas Dickson the novelist, and Joseph P. Knapp are just a few of the well known people who hunt geese, ducks, brant, and other wild fowl thereabouts.

You will travel on a fringe of sand, far from the mainland. From north to south you pass Little Island Life Saving Station, False Cape Life Saving Station—many a ship was stranded there in early days, believing it was entering Hampton Roads—Wash Wood Life Saving Station, Penny Hill, Whale Head Light, Poyneu Hill Life Saving Station, Caffey Inlet Life Saving Station, though the inlet from which it took its name has vanished. Then you come to the Life Saving Station at Paul Gamiel Hill, and another near Kill Devil Hill, and on to Bodie Inlet and Light. From Nag's Head, of course, you can cross over to Roanoke Island where was born Virginia Dare, America's first native white child. Oregon Inlet, on the way to Cape Hatteras, will be the end of the route until it is bridged. There, as in the other passes you will find splendid fishing, blue fish, channel bass, sea trout, rock and numerous other species.

Of course the biggest sight of all will be Kill Devil Hill, that strange peripatetic mountain from which the Wright Brothers made hundreds of glider flights and later took flying from the mythology of Icarus into the realm of accomplished fact. Returning from Kill Devil Hill and Kittyhawk, motorists will be able to take the new bridge under construction to Point Harbor on the mainland, and drive thirty miles to Sligo, on the Atlantic Coastal Highway, from which point the highway leads to Elizabeth City, N. C., fifteen miles south, and Norfolk, Va., twenty-two miles north.—Maine Motorist.



Many Nations Expected at Sixth Road Congress

27 Countries Already Have Accepted Invitations Sent Out by State Department in January—Other Acceptances Looked for During Next Few Weeks

Besides Official Delegates Many Individuals and Groups will be Present at Deliberations to be Held in Washington Next October

ALREADY 27 countries have accepted invitations to participate in the Sixth International Road Congress to be held in Washington next October and approximately that many more acceptances are expected to come in during the next six or eight weeks, according to an announcement by Thomas H. MacDonald, Secretary-General of the American Organizing Commission. Invitations were sent out last January by the State Department to a total of 58 countries, Mr. MacDonald said.

The acceptances so far received should be regarded as but the first wave of returns, it was indicated, as there is ample time for countries to accept and frequently much formality accompanies the interchange of such communications.

While some of the more important nations have not as yet decided whether they will be represented at the congress by official delegates, the list of acceptances includes such countries as Germany, England, France and Italy in Europe, India, China and Japan in Asia, Colombia, Ecuador, Cuba, El Salvador, Costa Rica and Honduras in Latin America, and Canada. Other countries which announced their decision to be represented officially at the congress are:

Bulgaria, Denmark, Egypt, Nigeria, Hong Kong, Greece, Irish Free State, Norway, Poland, Rumania, Holland, Switzerland and Czechoslovakia. Countries of Latin America are expected to be especially well represented at the congress, it is indicated. In addition to those that have officially accepted invitations, a number have signified their intentions of participating. Among these are Mexico, Peru and others.

Besides official government delegates, representatives of private and semi-public organizations will attend, as the congress is composed not only of governments but also of private groups, such as motor clubs, and individuals. In all, several thousand delegates are expected and already many private groups and individuals have notified Secretary-General MacDonald that they will be on hand.

The congress will be divided into two sections, one dealing with construction and maintenance of highways, the other with traffic and administration. Each section has been allotted three questions for discussion. Under construction and maintenance the questions to be discussed are: results obtained by use of cement, bricks or other artificial paving; the use of tar, bitumen and asphalt in road construction; and the construction of roads in new countries, such as colonies and undeveloped regions. Questions to be discussed by the second section are: ways and means of financing highways; coordination of highway transport with other forms of communication; and traffic regulation in large cities and their suburbs and parking and garaging of vehicles.

Coincidental with the Road Congress the American Road Builders' Association will stage an international exposition of the latest highway equipment and material, Charles M. Upham, engineer-director of the association, announced recently. This will be divided into two sections, an inside show in the Washington Auditorium and an outside show where road-building equipment will be shown in operation.

1930 Marks New Highway Progress

Three States Finish Initial Stage of Federal Aid Roads—Six Routes Complete.

By **ROY D. CHAPIN**, Chairman of the Highways Committee, National Automobile Chamber of Commerce; Chairman of the Board, Hudson Motor Car Company.

WITH a decade of actual construction under the Federal Aid Act just coming to a close, the highway engineering forces of the country are rapidly completing the first stage of development of the greatest system of roads the world has ever known.

As 1930 begins, three States have completed initial improvement of all the roads within the seven per cent system designated as Federal Aid roads, while others are reaching down into the last one-third of this mileage.

By and large most of the main traveled roads of the United States have now been improved to some degree even though only the grading and drainage has been accomplished.

No Community Without Roads

There is now no community in the United States which is not accessible by a highway of some sort.

Six roads taking off from Maine, New York, Michigan, Wisconsin, Minnesota and Oregon are now improved from the northern to the southern boundaries of the United States. One from points east to St. Louis and on to San Diego is now improved from east to west and two others, one along the northern route, the second over the route of the Lincoln highway, are improved for all but short stretches.

In Maryland, Rhode Island, and Delaware, the State engineers in co-operation with the Secretary of Agriculture are already devoting portions of their annual allotment of Federal Aid to the improvement of roads outside of the original seven per cent system as the law provides they may.

Secondary Roads Improved

Elsewhere, attention is now being given to the secondary roads of the primary system and as their development is pushed, more and more of the farmers will be brought into direct contact with the cities.

As the initial degree of improvement is completed, the States are going ahead with the second and more costly stage of their work. Wherever traffic justifies it and funds permit, highways are being raised to new standards of service. A constant program of resurfacing to higher types is being carried on in every part of the country.

Main arteries of communication are being widened and strengthened to meet the increasing demands of a traffic which today numbers more than 26,000,000 motor vehicles of all kinds.

Elimination of railroad grade crossings through relocation as well as by separations, realignments and super-elevations, are among the tasks which Federal and State engineers have set for themselves as major contributions to the safety of the motor using public.

Federal Funds Lagging

In the accomplishment of this great feat it is a striking fact that more miles of road within the Federal system have been improved by the States without Federal aid than with it. Of the certified system of Federal mileage, 80,000 miles have been paid for in part by the nation, while 90,000 have been improved at the sole expense of the States despite the fact that every mile in the system is of national importance.

During the seven-year period from 1921 to 1929,

state and local expenditures for road purposes have increased from slightly more than \$1,000,000,000 to an estimated total of \$1,700,000,000.

During the same period Federal Aid expenditures have decreased from \$88,000,000 in 1921 to \$77,500,000 in 1929, with a peak of \$91,000,000 in 1925.

Motor Taxes Increasing

In the same period motor vehicle revenues in the form of registration and gasoline taxes have risen from around \$120,000,000 to an estimated total of \$775,000,000, an amount which without personal property and municipal taxes virtually equals the entire State expenditures of \$860,000,000 for 1929.

In other words, during a period of intensive highway construction when every other agency increased its appropriations, Federal highway aid has remained static.

Where it was once around 8 per cent of the total, Federal Aid is now but 5 per cent, despite the fact that the roads which are of interstate importance generally speaking, are the heaviest travelled and consequently the most expensive.

Needed to Aid Employment

This condition assumes particular importance at the present time for four reasons.

FIRST, as President Hoover has put it, the present time is a time when every effort should be made to "equalize deficits in employment." No more gainful use can be made of labor than in the construction of roads.

SECOND, with the States entering upon a more expensive stage of road construction, the Federal government should assume more of the costs of building the roads which are of national importance.

THIRD, there is an increasing and justified demand for the improvement of roads off the main State systems and of immediate interest to local traffic. Federal increases for the development of main market roads will release State and local funds for the development of these other highways.

FOURTH, the importance of high standards of construction and maintenance becomes emphasized as road builders turn their efforts to heavy traffic arteries. Federal Aid should always be maintained at a percentage of the whole road expenditure, which will render it effective in this, perhaps, the most important function which it fulfills under the present plan of cooperation.

Phipps-Dowell Bills Propose Increases

In the introduction of bills providing for increases, Senator Phipps of Colorado, Chairman of the Post Office and Post Roads Committee, and Congressman Cassius C. Dowell, Chairman of the Road Committee of the House have definitely recognized this obligation and their measures will undoubtedly have a general approval from those who are concerned with highway improvement.

There have been other notable events in the highway period which has been under survey.

As an illustration of the vitality which the road movement has, it is notable that in the past seven years the State highway department have added 100,-

000 miles, or a 50 per cent increase, in the mileage of roads under their direct supervision.

Road Cost Decreases

As a result of constant research, study and practical application, the taxpayer is now receiving greater returns from every dollar of his expenditure for Federal roads than heretofore. Thus while common labor today receives 41 cents per hour as against 33 cents in 1922, plain cement pavement now costs but \$1.95 per square yard as against \$2.43 on an average for the United States as a whole. Geographical regions of course, vary, but the trend everywhere for total costs is downward and at the same time quality is generally better.

Growing Use of Standard Markers

Standard highway warning signs have been adopted by all States in cooperation with the Department of Agriculture, and on June 30th, reports to the Bureau of Public Roads indicated that 21 States had erected these signs; 19 other States were from 50 to 99 per cent complete; and six of the remaining seven were adequately marked with signs of their own design, which are being replaced by accepted standards as occasion permits. The other State has begun work.

As a guide to interstate or transcontinental travelers, appropriate markers carrying assigned highway numbers have now been erected on designated routes in 23 States. Twenty States report from 50 to 99 per cent and expect completion this year. The five remaining States are but 25 per cent complete, but will finish this year.

Roadside improvement is finally coming into the picture and virtually all of the States are today in the beginnings of a systematic effort to make highways sightly, as well as useful.

Strides forward are being made in world highway development. The Second Pan-American Highway Congress at Rio de Janeiro, Brazil, last August disclosed great progress made in all countries of the New World since the Pan-American Highway Commission came here in 1924.

Similarly, the Inter-American Highway Congress at Panama in October gave definite assurances of the location and construction of roads between the United States and Panama within the next five years.

World Engineers Coming

The outstanding event now on the highway calendar for 1930 is the sixth annual session of the Permanent International Association of Road Congresses, which will be held at Washington, D. C., in October.

At that time by invitation of President Hoover and the Congress, the leading highway engineers of the world will assemble here for an interchange of ideas bearing on the several phases of highway development.

Following the formal sessions, 300 of these men will be guests of the Highway Education Board in a series of tours worked out by the Bureau of Public Roads with the cooperation of the American Association of State Highway Officials in an effort to give each man an insight into conditions which will closely approximate the problem in his own country.

At least sixty nations are expected to participate in this event, and out of the sessions, it is anticipated new direction and stimulus will be given to sound road development the world over.—Maine Motorist.

BANKER FROM IOWA PRAISES ROADS HERE

John Burianek, Jr., president of the People's Bank, Cedar Rapids, Iowa, thinks Florida has the finest system of highways in the United States. He so informed the Jacksonville Motor Club yesterday after a tour of the State.

"I have been in every State in the Union," he said, as he applied for road information on routes to the North and East, "and I want to say that Florida has the best paved roads I have ever seen."

Mr. Burianek said he was delighted with Florida. Similar opinions were expressed by two other visitors to Florida, following trips throughout the State. They were R. Pulswatke, of Fond du Lac, Wis., and James R. Glidden, of Middleboro, Mass. "The roads are wonderful and the climate is fine," they said.—Florida Times-Union.

BY-PASS HIGHWAYS

The problem of through automobile traffic, which it was thought had been met by the construction of interstate highways, presents itself more forcefully than ever in those sections of the country where large cities dot the established transcontinental or intersectional routes.

Tourists, traveling long distances, want to avoid congested city streets and have sought what relief they could find by the selection of routes that avoided crowded traffic centers, but this is not always feasible. There has developed, in consequence, the theory of by-pass highways, designed to carry through traffic away from all dense centers of population and thereby expedite both motor freight and travel for pleasure.

The advantages to travelers, shippers and the cities themselves from this diversion of traffic are manifest. Through automobile traffic is no longer regarded as a trade stimulus by large cities. These urban centers are having enough difficulty with domestic traffic problems without encouraging their multiplication. Smaller cities, which have traffic problems correspondingly great, but want the tourist trade, favor by-pass highways because they separate those who want to trade with them from those who are speeding toward another goal beyond.

Those mapping the proposed Washington boulevard, which will connect Maine with Florida by way of the national capital, have in mind a highway that will make it optional with the motorist whether he will drive through or around cities along the route. Those who want to get to their ultimate destination will find their progress expedited and their trip made more comfortable. The others will be denied no sight-seeing privileges.—Palm Beach Daily News.

"Then you deny," said the magistrate, "that you were rude to the policeman when he asked to see your license?"

"Certainly, sir," replied the motorist. "All I said was that from what I could see of him I was sure his wife would be happier as a widow."

Revising Emerson

"Let's see, how does that saying go: 'If a man make a better mouse-trap than his neighbor, the world will beat—will beat—'"

"Will beat him out of the patent, no doubt."



Eliminating The Glaring Headlight Menace

OUTSTANDING safety and research laboratories, which have been trying to overcome the dangers of glaring headlights since the advent of the automobile, are now turning their attention to an entirely new field of highway illumination, which it is claimed will reduce the nation's death toll from accidents and assure night-driving with safety.

This new principle of lighting, which has been accomplished by concealing the source of light, as well as the reflectors, and would revolutionize the system now used on more than 26,000,000 motor vehicles, has been advanced by B. B. Fortney, illumination and safety engineer of Louisville, Ky., who is carefully guarding the principles until the government has completed its studies.

The importance of "safe" headlights can be seen from the following facts:

1. There will be a toll of 11,500 deaths, 400,000 injuries and a property loss of \$340,000,000 in 1930 directly attributable to glaring and blinding lights.

2. Fully 70 per cent of the nation's car owners now avoid night driving due to the present dangers involved, serving to add to the congestion on the highway during daylight hours.

3. Traffic is being speeded up and during 1929 ten states increased their maximum speed limits, while two abolished them altogether, which served to increase the hazard of incorrect illumination.

4. Millions of dollars are represented in the annual tire loss due to the streets and highways being littered with broken glass due to the breaking of the present large open-face lens.

Safety authorities now believe that discernibility for night driving has been obtained, and the perplexing problem of highway illumination has been solved

by this new principle of indirect flood lighting. The interest manifested in this new principle of illumination indicates that it will attract wide-spread attention at the forthcoming session of the National Conference on Street and Highway Safety.

Mr. Fortney says:

"Evidently too much emphasis has been placed in the past upon physical light values in highway illumination rather than to the function of the eye and discernibility in darkness, when subjected to intense bright objects such as the conventional open-face headlight. The function of the eye and its adaptation to natural sunlight should be the criterion of any method of artificial illumination. The entire absence of sky-light effects in any scheme of artificial lighting decreases discernibility on account of its reciprocal value to the eye; therefore, the present open-face headlight presented in the range of vision in darkness destroys this discernability, and is commonly called glare. This is substantiated by the fact that meeting an intense bright headlight on the highway in daylight does not interfere with correct vision."

He explains that the present headlights are faulty and unsafe because these factors have not been considered. In addition there has been within the last few years a decided increase in the size of the conventional reflector, presenting a larger bright object in the darkness to further counteract visibility. The short axis and distribution lens creates a dancing beam upon the roadway, uncontrolled, and without uniform distribution, causing preferential accommodation of the eye.

"As a result of all this, only radical changes will relieve the unsatisfactory and hazardous conditions of attempted highway illumination," he continued.



The changes wrought in the new principle of projecting highway illumination are: Obscuring the light source and reflecting surfaces from the approaching driver. Uniform distribution of light beam upon roadway surface with definite beam-top control to the horizontal plane, as only a non-inverted beam beyond the frontal emitting aperture can possess such characteristics. Therefore, there is no glare, no image of the headlight upon a wet pavement, and no fog blanket presented to the eyes of the driver.

A Boomerang

Actress: I'm ruined! I'm ruined! Look at this newspaper.

Friend: Have they published some scandal about you?

Actress: Worse than that. I signed a testimonial stating that I always smoked Mildwhiff cigarettes because they never bothered my throat; and I signed another testimonial that I always use Lymphatic lozengers to protect my throat after smoking; and here they are both on the same page.—Life.

A Denver schoolboy, in answer to an examination question, wrote that "the principal parts of a sentence are the subject and the predicament," and what he probably had in mind was a sentence in a millionaire's love letter.—Evening Post.

Then there was the absent-minded Scotchman who ordered asparagus and left a tip.

Fashion Note

Apparently to attract any attention in the social swim it is now necessary for a lady to out-strip all others.

Skin 'Em Alive

Wanted 100 men to peel pulp, painters, paper-hangers, and pipefitters.—Ad in a Canadian paper.

A modern girl is one who can meet the wolf at the door and come out with a fur coat.

Dumb: "We're going to give the bride a shower."
Dumber: "Count me in. I'll bring the soap."

An oyster met an oyster
And they were oysters two.
Two oysters met two oysters
And they were oysters, too.
Four oysters met a pint of milk
And they were oyster stew.

Beats The Whistle

Interviewer: "Are you one of those girls who watch the clock?"

Applicant (with dignity): "No sir; I have a wrist-watch."—Buffalo Evening News.

A colored man and his sweetheart, followed by three pickaninnies, applied to the clerk of a Southern courthouse for a license to wed.

The clerk eyed the assemblage doubtfully.
"Whose children are these?" he asked.

"Dey our'n," was the ready response from the man.

The clerk was scandalized, being new at his post.
"You ought to be ashamed of yourselves, waiting to get married till you have a family half grown—"

"Jedge, you'll have to excuse dat," interrupted the "bride," sweetly. "De roads out our way is so bad!"

Trend Toward Better Pavement

Former Highway Official Sees Great Advances In Road Durability

MOTORISTS who are providing the funds for a larger part of the country's street and highway paving bill in the form of motor license fee and gasoline tax have cause for gratification in the recent trend in types of paving material.

No longer are the people satisfied with the cheaper types of pavement, according to a brief bulletin issued on the subject. They are now calling for the best, and they are deeply concerned in establishing the proposition that it is more economical to consider and be guided by the total cost of a pavement over a period of years rather than the initial cost.

"In the matter of pavement tests," says the bulletin, "the principal users of roads and streets are becoming more enlightened. They are beginning to learn that no comparison of maintenance costs are logical or fair unless all conditions surrounding the different pavements are the same. For example, a comparison of pavement values, to mean anything at all, must include climatic condition, character of subsoil over which the pavement is laid, and also the volume of traffic. The personnel in charge of maintenance and repair operations must also be the same, if the taxpayer is to form anything near an accurate

conclusion as to what the various types of road or street are going to cost him.

"The only authentic experimental test," says George F. Schlesinger, former director of the Ohio State Highway Department, "as to the durability and maintenance expense of various types of pavement is the Chevy Chase Connecticut Avenue experimental road in Washington, conducted by the U. S. Bureau of Public Roads."

Commenting on the appearance of the brick used in the test, the government report states that "on the major portion of the brick section, the surface had the same smooth, unworn appearance as originally when the road was laid."

"This fact," concludes the bulletin, "should be of particular interest to motorists who are supplying such vast sums of money for pavement—certain brick were measured so that the amount of wear could be determined. Of the brick which would meet present-day specifications, the test showed the average wear to be at the rate of one inch in four hundred years. This, it is submitted, should be a period of road wear long enough to suit any reasonably-minded motorist."

St. Louis Gets Road Show

ST. LOUIS will entertain the 1931 convention and road show of the American Road Builders' Association. Factors in its selection, at the annual business meeting were the tremendous road-building programs of the central and southwestern states, and its central location and excellent convention facilities.

The meeting in January will bring to that region for the first time in years the annual gathering of highway officials and engineers of the entire nation. Attendance ranges from 20,000 to 30,000 people, and the road show, which will be staged in the Arena, will undoubtedly attract 500 car loads of road-building machinery and equipment.

Houston, Cleveland and Atlantic City were spirited bidders for this convention, the nation's largest in the industrial field.

"Careful analysis of the road-building industry revealed that the Mississippi Valley states are engaged in greater road-building effort than any other section of the country," declared Charles M. Upham, engineer-director of the association.

"The geographical location of St. Louis is such," he added, "that we confidently expect the best representation of men actively identified with road building we have had in all the 28 years of our history. A questionnaire of our membership revealed an overwhelming majority in favor of locating the 1931 meeting in the middle west, and of the cities there St. Louis apparently has by far the best facilities for staging the mammoth road show. We are looking forward to a great year of progress in highway work and we are glad to be able to climax the year with our annual convention in the great city of St. Louis."

Two hundred officials and members gathered for the Association's annual business meeting with

nessed the installation of William A. Van Duzer, assistant chief engineer, Pennsylvania Department of Highways, as president.

Lieut. Col. C. E. Myers, director of transit, Philadelphia, Pa., assumed the office of president of the city officials' division, and Stanley Abel, county engineer of Taft, Calif., became president of the county highway officials' division.

President Van Duzer, in his inaugural address, pointed out that, considering deficiency in highway improvement as a debt, the United States is now only meeting the carrying charges and is not reducing the obligation, which means continued traffic congestion.

"The automobile registration in 1909 was 312,000, while in 1929 it was 26,500,000, which shows the improved road mileage has increased 250%, while automobile registrations have increased 8400%. In 1909 there were 1.64 cars to each mile of improved road, while in 1929 there were 40.01 cars to each mile.

"Comparison of the increase in registrations and the increase in improved road mileage shows that there is an annual increase of about 4% in each, therefore, the United States is now only meeting the carrying charges in highway improvement."

Great strides in road construction work in Latin America during 1930 were described by Senor M. A. Coroalles, chief engineer of highways and bridges of Cuba, who was installed as president of the Pan-American division, which has members and honorary representatives in every Latin American nation.

Senor Coroalles has full charge of the great Central highway project in Cuba, and left immediately after the meeting for Havana, where on May 20th President Machado will lead a procession which will

(Turn to page 23)

Status of Construction

THROUGH FEBRUARY 28TH, 1930

Proj. No.	Contractor	Road No.	County	Total Length Miles	Clearing Miles	Grading Miles	Base Miles	Surface Miles	Type	Per cent Complete
62-A	L. B. McLeod Const. Co.	24	Osceola	6.32			3.00	0.00	S.T.R.B.	30.00
62-C	L. B. McLeod Const. Co.	24	Osceola	12.09			6.80	0.00	S.T.R.B.	50.00
63-A	Morgan-Hill Paving Co.	4	Palm Beach	9.21				2.25	Concrete	20.00
63-C	Robt. G. Lassiter & Co.	4	Broward	13.24				0.00	Concrete	0.00
64-A	H. E. Wolfe Const. Co., Inc.	17	Hillsborough	9.61				4.80	Concrete	60.00
64-C	H. E. Wolfe Const. Co., Inc.	17	Hillsborough	9.61				9.61	Concrete	99.00
73-A	Wm. P. McDonald Const. Co.	17	Polk	3.66			0.00	0.00	Mac. Asph.	0.00
74	Manly Const. Co.	2	Orange	14.34			0.00	0.00	Bit. Mac.	0.00
669-Y	State Convict Forces	27	Collier	10.55			10.55	9.51	S.T.R.B.	96.00
698	H. E. Wolfe Const. Co.	19	Leon	12.45				0.00	Concrete	0.00
706-A	T. B. Gillespie, Inc.	28	Putnam-Clay	10.83			9.20	0.00	S.T.R.B.	66.60
742	L. B. McLeod Const. Co.	13	Alachua	7.65			7.65	7.65	S.T.R.B.	100.00
752	W. J. Bryson Paving Co.	40	Walton	8.72	8.72	8.72		8.72	Sand-Clay	100.00
756	State Convict Forces	19	Marion	11.89			6.75	0.00	S.T.R.B.	45.00
766	State Convict Forces	10	Bay	8.74		8.35			Graded	90.00
787	State Convict Forces	10	Walton	16.29	11.39	9.92			Graded	46.08
788	W. J. Bryson Paving Co.	10	Walton	17.50	16.62	15.05			Graded	89.56
798	State Convict Forces	13	Nassau	15.03	7.50	6.88			Graded	47.20
806-C	R. B. Stewart	25	Hendry	11.00	11.00	11.00			Graded	100.00
806-D	R. C. Huffman Const. Co.	25	Hendry	12.77	12.77	11.49			Graded	90.00
820	H. D. Spangler & Co.	96	Jefferson	9.45	8.03	1.90			Graded	32.00
821	H. D. Spangler & Co.	96	Jefferson	5.18	5.18	4.82			Graded	93.00
832	State Convict Forces	10	Santa Rosa	16.01	7.00	5.30			Graded	25.00
833	State Convict Forces	10	Santa Rosa	8.02	7.25	2.50			Graded	20.00
840	State Convict Forces	115	Walton	10.20	9.78	7.65			Graded	68.00
841	State Convict Forces	115	Walton	6.44	2.58	2.58			Graded	36.00
842	W. J. Bryson Paving Co.	115	Walton	10.15	10.15	9.14			Graded	90.00
845	State Convict Forces	19	Taylor	8.57	8.57	8.00			Graded	90.00
846	State Convict Forces	19	Taylor	11.00	8.00	5.25			Graded	52.00
854	G. W. Byrd	60	Walton	9.81	9.81	8.21		3.00	Sand-Clay	68.00
855	C. C. Moore Const. Co.	60	Walton	9.93	9.93	9.93		9.13	Sand-Clay	95.00
870	S. J. Groves & Sons	143	Palm Beach	10.83	0.00	0.00	0.00	0.00	S.T.R.B.	0.00
876	State Convict Forces	78	Duval-St. Johns	20.00	4.00	2.50	0.00	0.00	S.T.R.B.	8.00
878	State Convict Forces	77	Gilchrist	12.00	1.25	.25			Graded	4.00
Total complete February 28th, 1930					2,977.98	2,945.37	1,565.54	2,382.13		
Complete month of February					5.92	14.02	9.11	12.24		
Total complete January 20, 1930					2,972.06	2,931.35	1,556.43	2,369.89		

TOTAL MILEAGE COMPLETE

	Concrete	Brick	B. C.	S. A.	B. M.	Asph. Block	S.T.R.B.	S.T.S.C.	S.C.	Marl	Total
Complete to Jan. 31, 1930	336.79	17.13	39.75	114.75	109.57	23.70	1,300.94	290.54	198.90	27.58	2,459.65
Complete month of Feb.	5.61						8.16		2.69		16.46
Complete to Feb. 28, 1930	342.40	17.13	39.75	114.75	109.57	23.70	1,309.10	290.54	201.59	27.58	2,476.11

Contracts Awarded by State Road Department

JANUARY 1st, 1930, TO MAY 24, 1930

Proj.	Road	County	Contractor	Length Miles	Length Feet	Contract + 10%	Type
70	5	Charlotte	Tampa Shipbuilding & Engr. Co.		75	\$ 45,676.40	Bascule
73-B	17	Polk	Cone Bros. Const. Co.		305	43,984.54	Conc. Bridge
757-B	2	Polk	Florida Bridge & Const. Co.		117	15,234.78	Conc. Bridge
758-B	2	Polk	Cone Brothers Const. Co.		436	59,267.06	Conc. Bridge
20	1	Holmes-Washington	Florida Basic Rock Co.	2.0		19,800.00	Rock Base
62-A	24	Osceola	L. B. McLeod Const. Co.	5.22		123,676.65	R. B. S. T.
73-A	17	Polk	Wm. P. McDonald Const. Co.	3.66		88,283.19	Mac. Asphalt
63-C	4	Broward	R. G. Lassiter & Co.	13.24		470,941.54	Concrete
74	2	Orange	Manly Const. Co.	14.34		387,032.94	Asp. Concrete
698	19	Leon	H. E. Wolfe Const. Co.	12.45		276,425.45	Concrete
65	5	Hillsborough	C. M. Moore Const. Co.	.30		23,780.00	R. B. S. T.
721-B	3	Putnam	L. M. Gray	.25		18,829.00	R. B. S. T.
835	5	Marion-Citrus	Manly Const. Co.	.15		4,439.71	R. B. S. T.
40-B	4	Broward	L. M. Gray	.31		10,484.43	R. B. S. T.
68-A	4	Broward	S. P. Snyder & Sons	.37		28,972.93	R. B. S. T.
587-B	5-A	Suwannee	Duval Engineering & Contr. Co.	.34		17,736.22	R. B. S. T.
876-A	78	Duval-St. Johns	Standard Dredging Co.	8.00		81,574.76	Shell Base
758	2	Polk	A. E. Campbell	.10		2,095.74	R. B. S. T.
Totals				60.73	933	\$1,718,236.24	

THE STUDENT'S OPPORTUNITY

(Continued from page 11)

and it is represented in Washington and throughout the nation by engineers whose aim is to further the progress of the road building cause, while assisting, officially, in seeing that public funds go as far as possible, and that so much road is built for every dollar expended.

All of these organizations, all of these road programs, all of these nations, extend a cordial invitation to the engineer-student to specialize in some phase of highway engineering. If he does that, the opportunity will be ready for him when he completes his scholastic career, to put his theories into practice.

ST. LOUIS GETS ROAD SHOW

(Continued from page 21)

dedicate 250 miles of the completed road from Havana to Santa Clara.

With a background of 31 years in highway work in Cuba, Senor Corrales has seen Cuban roads grow from 158 miles of surfaced road to the present 3,000 miles. Immediately after completion of the 700-mile Central highway, early in 1931, Cuba will launch the building of 4,000 miles of branch roads.

The Central highway will cost \$100,000,000 and is being built 20 feet wide, 29 feet through towns, with a maximum grade of 5%, and with no grade crossings. Separation by underpasses will eliminate about 100 of these safety hazards.

"All Latin American nations that have begun road-building programs will see the benefits of modern roads, and will keep on to their completion," Corrales declared.

Full Hand Beats a Straight.—

Harmon writes a high-brow hand,
A hand aristocratic.
How plain is Harmon's signature!
How virile and emphatic!

Saunders writes a sorry scrawl,
A scrawl that looks terrific,
A kind of crude cuneiform
Or scrambled hieroglyphic.

Harmon's graceful characters
Have a soft and subtle shading,
Which he, a struggling shipping clerk,
Wastes on bills of lading.

Saunders' signature looks like
The laundry marks on collars—
But any bank will honor it
For twenty million dollars!
—Arthur L. Lippmann, in Life.

Try A Fishhook

The town of Plunkville has a regulation against bare legs on the street. Flesh-colored hose were a problem. They solved that nicely by watching for the seam. Then came seamless hose.

"How can I tell whether these girls have bare legs or not?" was the complaint of a policeman on guard.

"Pinch 'em," was the only suggestion he got.—Louisville Courier-Journal.



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Kindness First

"What do you do when in doubt about kissing a girl?"

"Give her the benefit of the doubt."—Montreal Star.

Talking Turkey

Irate master (to negro servant): "Rastus, I thought I told you to get a domestic turkey. This one has shot in it."

Rastus—"I done got a domestic turkey, sir."

Master—"Well, how did the shot get in it?"

Rastus—"I 'specks they was meant for me, suh."
—R. R. Magazine.

Sauce for the Drake

A certain club had replaced its familiar black-coated servitors with young, and sometimes pretty, waitresses. One of the old die-hard members who had strongly opposed the idea dropt into lunch one day.

"How's the duck today?" he growled, glowering at the girl who came to serve him.

"Oh, I'm all right," said the waitress, perkily.
"How are you sir?"—Brooklyn Eagle.

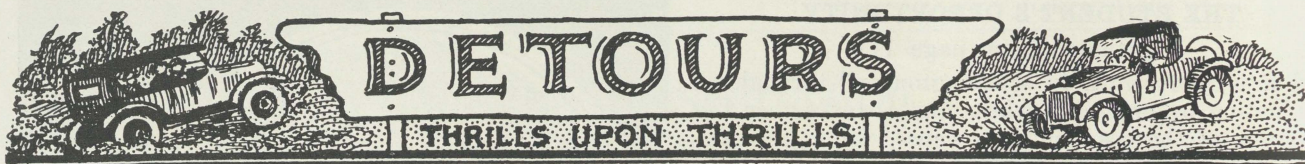
Decorative Bargain

Lady (with black eye)—"Look what I've just got in your lingerie department."

Unobservant Shopwalker (languidly)—"Beautiful, isn't it? Pay at the desk, please."—Punch.

Policeman: "How did the accident happen?"

Motorist: "My wife fell asleep in the back seat."



A Few Don'ts in Parachute Jumping

Don't always head for a skylight on the chance that there may be an artist's model underneath. It may be painful, and artists' models aren't usually worth it, anyway.

Don't try to land head first. It's spectacular but isn't considered good form in the best circles.

Don't smoke during a jump. You might start a forest fire and then what would the field mice do?

Don't cut the strings of your parachute on the way down. That is a pleasure which is greatly overrated.

Don't drink on the way down. Pink snakes and blue elephants can't fly and that's half the fun of drinking.

Don't ever jump if you're not in full dress. It just isn't being done this semester.

Don't jump.—Williams Purple Cow.

Garden Truck

"I have a terrible rumbling in my stomach. It's like a wagon going over a bridge."

"It's most likely that truck you ate this morning for breakfast."—Oregon Orange Owl.

"Lady, do you know the Golden Rule?"

"Sure. Get all the gold you can."

—Reserve Red Cat.

A newspaper correspondent states that the following notice has been posted round about an electric station in the North:

"Beware: To touch these wires is instant death. Anyone found doing so will be prosecuted."

R. A. Grady, of Duluth:

I used to think monthly bills
Were one of life's most trying ills,
But I feel differently now,
About the bills, for I've learned how
To read a story in each one,
So now the bills are kind of fun.
Four ninety-eight for silken hose:
Means Mother to a party goes.
A little coat, a hat of blue:
From this bill smilingly steps Sue,
And the grocery bill will tell
The wide, wide world we all are well.
What use o'er monthly bills to wail?
For each one there is a tale
Of happiness for someone who
For happiness looks straight to you.
Why even in the doctors' bills
There is a tale of vanquished ills.

There's Many a Slip

Junior: "Mama, look at that funny man across the street."

Mother: "What is he doing?"

Junior: "Sitting on the sidewalk talking to a banana peel."

What He Lacked

A colored agent was summoned before the insurance commissioner.

"Do you know," said the commissioner, "that you can't sell life insurance without a State license?"

"Boss," said the ducky, "you suah said a mouf-ful, I done learned I couldn't sell it, but I didn't know the reason."

Business

Mr. Jacobs: "I sells you dot coat at a grand sacrifice."

Customer: "But you say that of all your goods. How do you make a living?"

Mr. Jacobs: "Mine frient, I make a small profit on de paper and string."

Oh-h Yeah!

Siki: "I have no more faith in women."

Soko: "Why not?"

Siki: "I put a matrimonial advertisement in the paper and one of the replies was from my fiancée."

Sez You!

Chinese Patient (over telephone): "Doc, what time you fixee teeth for me?"

Doctor: "Two-thirty, all right?"

Chinese Patient: "Yes, tooth hurty me all right, but what time you want me to come?"

One great difference between art exhibitions and dances is that the paintings at art exhibitions don't dance.—Kay Features.

Nuff Sed

"You are asking for a raise, eh? Give me two reasons for it."

The employe murmured, "Twins." — Kreolite News.

Little Lucy had just returned from the children's party and had been called into the dining room to be exhibited before the dinner guests. "Tell the ladies what mama's little darling did at the party," urged the proud mother. "I frowed up," said Lucy.—Kreolite News.

"Really, I can't play golf," the sweet young thing said. "I don't even know how to hold the caddy."—Drexlerd.

A fraternity had sent its curtains to be laundered. It was the second day that the house had stood unveiled. One morning the following note arrived from a sorority across the street:

"Dear Sirs: May we suggest that you procure curtains for windows? We do not care for a course in anatomy."

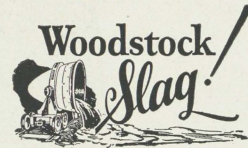
The chap who left his shaving to read the note answered:

"Dear Girls: The course is optional."

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